

Acronyms and Abbreviations

2-D	two-dimensional
3-D	three-dimensional
A	amp
AAR	azimuth ambiguity ratio
ABMA	Army Ballistic Missile Agency
ACeS	Asia Cellular Satellite
ACTS	Advanced Communications Technology Satellite
ADC	analog-to-digital converter
ADEOS	Advanced Earth Observation Satellite
AFRL	Air Force Research Laboratory
AFT	allowable flight temperatures
ALTA	(Magellan) altimeter antenna
AMR	(Ocean Surface Topography Mission) advanced microwave radiometer
AMSU	advanced microwave sounder unit (flown in Earth orbit on NOAA K/L/M weather satellites)
APC	antenna pattern correction
ARPA	Advanced Research Projects Agency

ASI	Italian Space Agency
AU	astronomical unit
AUT	antenna under test
BITE	built in test equipment
CAD	computer-aided-design
CALIPSO	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (satellite)
CCSDS	Consultative Committee for Space Data Systems
CFRP	carbon-fiber-reinforced plastic
CH₃CN	acetonitrile
CLAES	(UARS) cryogenic limb array etalon spectrometer
CIO	hypochlorite
CMC	ceramic matrix composite
CNES	Centre National d'Etudes Spatiales (French space agency)
CNFR	cylindrical near-field range
CO	carbon monoxide
CO₂	carbon dioxide
COI	Composite Optics, Inc.
comsat	communications satellite
CPR	(CloudSat) cloud profiling radar
CPW	co-planar waveguide
CRM	(Galileo) central release mechanism
cross-pol	cross-polarization
CTE	coefficient of thermal expansion
CVCM	collected volatile condensable materials
CVD	chemical vapor deposition
CVI	chemical vapor infiltration

CW	continuous wave
DARA	German Space Agency
DARPA	Defense Advanced Research Projects Agency
dB	decibel
dBc	decibels referenced to carrier
dBi	decibels referenced to an isotropic radiator
dBic	decibels referenced to a circularly polarized, theoretical isotropic radiator
DC	direct current
DEA	(Mars Pathfinder) descent antenna
DEM	digital elevation model
DoD	Department of Defense
DORIS	(Ocean Surface Topography Mission) Doppler orbitography and radiopositioning integrated by satellite
DSN	(Jet Propulsion Laboratory) Deep Space Network
DTE	direct-to-Earth (link)
EDL	entry, descent, and landing
EFMR	electrostatically figured membrane reflector
EIK	extended interaction klystron
EIRP	effective isotropic radiated power or equivalent isotropically radiated power
EM	engineering model
EMF	electromotive force
EOS	Earth Observing System
ESA	European Space Agency
ESD	electrostatic discharge
EUMETSAT	European organization for the Exploitation of Meteorological Satellites

F/D	focal length to diameter (ratio) (f/D is also acceptable)
FDTD	finite-difference time domain
FE	finite element
FLTSATCOM	(Navy) Fleet Satellite Communications
FM	flight model
FM	frequency modulation
FOV	field of view
FSS	frequency selective surface
GALCIT	Guggenheim Aeronautical Laboratory, California Institute of Technology (organization that became the Jet Propulsion Laboratory)
GB	gigabyte
GEO	geosynchronous Earth orbit
GHz	gigahertz
GO	geometrical optics
GPSP	(Ocean Surface Topography Mission) global positioning system payload
GSFC	Goddard Space Flight Center
G/T	gain over noise temperature
GTD	geometrical theory of diffraction
H₂O	water
HCl	hydrochloric acid
HCN	hydrogen cyanide
HF	high frequency
HFCD	hybrid-fed crossed dipole
HGA	high-gain antenna
HNO₃	nitric acid

HPA	high power amplifier
HPBW	half-power beamwidth
IAE	Inflatable Antenna Experiment
IGARS	International Geoscience and Remote Sensing Symposium
IMP	imager for Mars Pathfinder
InSAR	Interferometric SAR
ISAP	International Symposium on Antennas and Propagation
IN-STEP	In-Space Technology Experiments Program
ISAT	Innovative Space-based Radar Antenna Technology Program
ISLR	integrated side-lobe ratio
ITU	International Telecommunication Union
IUS	Inertial Upper Stage
JMR	Jason-1 microwave radiometer
JPL	Jet Propulsion Laboratory
kG	kilogauss
kW	kilowatt
LEO	low-Earth orbit
LGA	low-gain antenna
LHCP	left-hand circular polarization
lidar	laser induced differential absorption radar
LMRE	(Mars Pathfinder) lander microwave receive antenna
LNA	low-noise amplifier
LO	local oscillator
LRA	(Department of Defense) Large Radar Antenna (Program)

LRA	(Ocean Surface Topography Mission) laser retroreflector array
LSST	Large Space System Technology
Mbps	megabits per second
MBSAT	(Space Systems/Loral) Mobile Broadcasting Satellite
MEMS	Micro-electro-mechanical systems
MEO	medium-Earth orbit
MER	Mars Exploration Rover(s) (Spirit and Opportunity)
MGA	medium-gain antenna
MGL	minimum gain along the range plane line
MGS	Mars Global Surveyor
MHz	megahertz
MIRO	microwave instrument for the Rosetta orbiter
MIT	Massachusetts Institute of Technology
MLI	multi-layer insulation
MLS	microwave limb sounder
MMIC	monolithic microwave integrated circuit
MO	Mars Observer
MPL	Mars Polar Lander
MRO	Mars Reconnaissance Obiter
MSAT	mobile satellite
MSU	microwave sounder unit (flown in Earth orbit on the TIROS-N meteorological satellite)
N₂O	nitrous oxide
NASA	National Aeronautics and Space Administration
NASDA	Japan's Space Agency
NASTRAN	NASA structural analysis computer program

NCO	numerically controlled oscillator
NGST	Next Generation Space Telescope
NIMA	National Imagery and Mapping Agency
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NSCAT	NASA Scatterometer (project)
NTT	Nippon Telegraph and Telephone Corporation
O₂	molecular oxygen
O₃	ozone
OCDS	Orbital Construction Demonstration Study
OH	hydroxyl radical
OMT	orthomode transducer
ONR	Office of Naval Research
OSTM	Ocean Surface Topography Mission
Pa	pascal
PASS	Personal Access Satellite System
PC	personal computer
PDT	Pacific Daylight Time
PIN	p-type, intrinsic, n-type diode
PLGA	(Mars Exploration Rover) petal low-gain antenna
PO	physical optics
PRF	pulse repetition frequency
psi	pounds per square inch
PTFE	polytetrafluoroethylene
PWB	plane-wave blockage
PWS	plasma wave search-coils

QOTL	quasi-optical transmission line
radar	radio detection and ranging
RAM	random-access memory
RAR	range ambiguity ratio
RCS	radar cross section
RF	radio frequency
RFS	(Voyager, Galileo) radio frequency subsystem
RHCP	right-hand circular polarization
RI	rigidizable/inflatable
rms	root mean square
rss	root sum square
RTG	radioisotope thermoelectric generator
RTV	reentry test vehicle
SAR	synthetic aperture radar
SAR/MTI	synthetic aperture radar/moving target indicator
SASS	Seasat-A scatterometer system
SCAMS	scanning microwave spectrometer (flown in Earth orbit aboard the NIMBUS-6 meteorological satellite)
SESWG	(NASA) Solid Earth Sciences Working Group
SGA	standard gain antenna
SIR	Shuttle Imaging Radar
SMA	sub-miniature version A
SMLS	azimuth-scanning version of the microwave limb sounder
SMMR	(Seasat and Nimbus 7) scanning multichannel microwave radiometer
SMP	shaped-memory polymers
SNR	signal-to-noise ratio

SO₂	sulfur dioxide
SRTM	Shuttle Radar Topography Mission
SSPA	solid-state power amplifier
STR	spring-tape reinforced (boom)
STS	Space Transportation System
SWB	spherical-wave blockage
SXA	(Voyager, Galileo) S-/X-band antenna subsystem
TDRSS	Tracking and Data Relay Satellite System
THz	terahertz
TIROS	Television Infrared Observation Satellite
TML	total mass loss
TMM	thermoset microwave material
TMR	(TOPEX/Poseidon) microwave radiometer
TNC	threaded Neill-Concelman (connector)
TOPEX)/ Poseidon	Ocean Topography Explorer mission (a joint U.S. and French effort to map ocean surface topography)
T/R	transmit/receive
TRL	technical readiness level
TWTA	traveling wave tube assembly [in 3] amplifier [in 4]
UARS	Upper Atmospheric Research Satellite
UHF	ultrahigh frequency
USM	unified scattering matrix
UV	ultraviolet
VEEGA	Venus, Earth, Earth gravity assist
VOIR	Venus Orbiting Imaging Radar
VRM	Venus Radar Mapper

VSWR	vertical standing wave ratio
W	watt
WEB	warm electronics box
WSOA	(Ocean Surface Topography Mission) wide swath ocean altimeter
WVR	water vapor recovered
XSDC	(Galileo) X/S downconverter subsystem